

Application No. 10/772,771
After Final Office Action of July 13, 2007

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REMARKS

In the Office Action dated July 13, 2007, claims 1, 2, 4-7, 9-12, 14-17, 19 and 20 are pending and all claims are rejected. The rejection is made final. Reconsideration is requested for at least the following reasons.

The sheet feeding apparatus disclosed in the present invention has a receiving unit for receiving information according to a lowered amount of the sheet container. That means in the present invention that a receiving unit gets information put/set/changed by a user/service man. For example, as disclosed in the original specification, a receiving unit can get information *externally* (e.g., by a user). This is clear from Figure 3, in which the setting keys K14 through K16 for setting the lowered amount of the document tray 22 and the setting keys K17 and K18 for setting the lowered amount of the document ray 22 by a numeric input are shown on the operator panel P (see page 26, lines 6-10). Thus, the lowered amount can be set based on the number of sheets of documents which is typical under normal and general usage (page 7, line 6-8), or the amount can be changed by each user according to specific needs.

The above amendment further particularly points out and distinctly claims the subject matter regarded as invention. No new matter is added. Entry of the amendment is respectfully requested.

Thus, the present invention describes and, as set forth in claim 1, claims a sheet feeding apparatus comprising:

A sheet feeding apparatus comprising:

- a sheet container for containing a plurality of stacked sheets;
- an elevation/lowering driving unit for elevating and lowering the sheet container;
- a sheet conveying unit for sequentially taking out the sheets from an uppermost layer put in contact with the sheet conveying unit by elevating the sheet container by the elevation/lowering

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driving unit and conveying the sheets to a predetermined conveyance path;

a regulating unit provided so as to be slidable on the sheet container for regulating a set position of a sheet;

a position detector for detecting a position of the regulating unit; and

a contact detector for detecting a contact state between the uppermost layer of the sheets contained in the sheet container and the sheet conveying unit,

wherein the elevation/lowering driving unit lowers the sheet container when a change in the position of the regulating unit is detected by the position detector in a state in which the uppermost layer of the sheets contacts the sheet conveying unit;

and further comprising:

a receiving unit for receiving information input externally for setting a lowered amount of the sheet container;
and

a storage for storing the received information.

wherein the elevation/lowering driving unit lowers the sheet container by the lowered amount stored in the storage when the position detector detects a change in the position of the regulating unit.

Claims 1, 2, 4-7, 9-12, 14-17, 19 and 20 are rejected under 35 U.S.C. §103(a) over Hattori et al. ("Hattori"; U.S. 6,091,927) in view of Hirota et al. ("Hirota"; U.S. 6,585,258). Applicants strongly disagree.

Neither Hattori, nor Hirota, nor their combination teach or suggest a sheet feeding apparatus having a receiving unit for receiving information according to a lowered amount of the sheet container; and a storage for storing the received information, wherein the elevation/lowering driving unit lowers the sheet container by

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the lowered amount stored in the storage when the position detector detects a change in the position of the regulating unit, as claimed herein.

The Examiner admits that Hattori **fails** to disclose a regulating unit positioned on the sheet container and, further, a position detector for detecting the position of the regulating unit. Hirota is cited for these deficiencies.

However, also Hirota **fails** to teach or suggest a sheet feeding apparatus having a receiving unit for receiving information according to a lowered amount of the sheet container; and a storage for storing the received information, wherein the elevation/lowering driving unit lowers the sheet container by the lowered amount stored in the storage when the position detector detects a change in the position of the regulating unit, as claimed herein.

The Examiner concludes that it would have been obvious to one of ordinary skill in the art

to include modification of input received from the regulating unit as detected by the positioned sensors when the position of the regulating unit is altered to instruct the elevation lowering drive unit to lower the sheet container from initiating contact with the sheet conveyance unit. This is a slight modification over Hattori in (Figure 6), where it is disclosed that the sheet container "return" to its original position after dispensing the documents that were positioned in the sheet container (7). By lowering the sheet container from contacting the sheet conveying unit by sensing the position change of the regulating unit will allow a user to easily add or remove sheets from the sheet container and prevent damage to the pickup roller and prevent contamination marks on the sheets.

Applicants strongly disagree. This statement is typical of hindsight reconstruction and justification. Nowhere in either Hattori or Hirota is there any suggestion of a sheet feeding apparatus having a receiving unit for receiving information according to a lowered amount of the sheet container; and a storage for storing the received information, wherein the elevation/lowering driving unit lowers the

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sheet container by the lowered amount stored in the storage when the position detector detects a change in the position of the regulating unit, as claimed herein.

Thus, the combination fails to disclose or suggest a sheet feeding apparatus having a receiving unit for receiving information input externally for setting a lowered amount of the sheet container; and a storage for storing the received information, wherein the elevation/lowering driving unit lowers the sheet container by the lowered amount stored in the storage when the position detector detects a change in the position of the regulating unit, as claimed herein.

In the present Office Action (page 8), the Examiner states that "the CPU (29) comprising a receiving unit (28; Figure 3) is connected to a motor linked to set up sensor (21) and a lift up sensor (27)." This means that RAM (28) corresponds to receiving unit in the present invention. However, the RAM (28) receives information by a set up sensor (21) and a lift up sensor (27) which are *internal* of this apparatus (not external). Moreover, the Examiner states that "in the initial set up when the tray is lowered to its resting position, the position of the tray is stored by the receiving unit (page 8)". However, it is respectfully submitted that this statement means, at most, that the RAM (28) gets a predetermined setting for a lowered amount of the sheet container before shipping but, after manufacture and during use of the sheet feeding apparatus, the RAM no longer receives external information for setting the lowered amount. Therefore, the combination of Hattori and Hirota fail to teach or suggest a receiving unit for receiving information input *externally* for setting the lowered amount of the sheet container, as claimed herein.

Thus, the combination of Hattori and Hirota fails to provide the claimed invention.

The Examiner also now concludes it would have been obvious to one of ordinary skill in the art, not only to combine Hirota and Hattori, but to also modify the combination when a change in the position of the regulating device is detected. Hattori has no regulating device as claimed. Even if Hirota is considered to have the claimed

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regulating device, Hirota never suggests lowering the sheet container based on a change in position of a regulating device.

Considering benefits of a device after it is invented and disclosed by the present Applicants does not place the idea of such benefits in the one of ordinary skill in the art from the combination of Hattori and Hirota.

The Examiner states further that

Hattori discloses a CPU (29) and a receiving unit (28) for receiving information according to the sensors positioned throughout the apparatus and storing the received information.

However, that is not a teaching or suggestion for a receiving unit for receiving information input externally for setting a lowered amount of the sheet container; and a storage for storing the received information, wherein the elevation/lowering driving unit lowers the sheet container by the lowered amount stored in the storage when the position detector detects a change in the position of the regulating unit, as claimed herein. Nowhere does Hattori suggest that the set point for the lowered amount can be input externally to the sheet feeding apparatus. Hirota does not make up for this deficiency.

The Examiner also states that

Hattori also discloses the sheet container (7) is lowered to its "preselected" position away from the sheet conveyance unit (8) when a signal is received to disengage the sheet container (7) from the roller (Col. 7, line 7).

However, at column 7, Hattori discloses lowering the bottom plate when a jam occurs *if* DF1 is not lifted. There is not even a hint of a suggestion, in Hattori, for the elevation/lowering driving unit to lower the sheet container by the lowered amount stored in the storage **when the position detector detects a change in the position of the regulating unit**, as claimed herein. Hirota does not make up for this deficiency.

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It is not seen how it would have been obvious for one of ordinary skill in the art to conclude that a mechanism for clearing a paper jam should be engaged when a position detector detects a change in the position of the regulating unit.

Thus, Hattori, Hirota and their combination *fail* to teach or suggest the features of (1) the receiving unit for receiving the information input externally for setting the lowering amount of the sheet container and (2) the storage for storing the received information. Therefore, those skilled in the art could not realize the invention by taking account of the combination of Hattori and Hirota. Moreover, modifying the apparatus according to the combination of Hattori and Hirota and, "configuring that, when the position of the regulating unit changes and the change is detected, an disclosed in Hattori, the sheet feeding unit 8 and sheet container 7 are put away from each other by the "predetermined" amount, which is preset [to the sheet feeding device by external input] and stored in the receiving unit 28" would not have been obvious to those skilled in the art at the time when the present invention was made. Nothing in the record supports the examiner's assertion of obviousness.

Thus, the combination of Hattori and Hirota fails to disclose a sheet feeding apparatus comprising (1) a receiving unit for receiving information according input externally for setting a lowered amount of the sheet container; and (2) a storage for storing the received information, wherein the elevation/lowering driving unit lower the sheet container by the lowered amount stored in the storage when the position detector detects a change in the position of the regulating unit, as set forth in claim 1. In the present invention as discussed above, for example, the lowered amount of the document tray 22 can be a value which is arbitrarily set by a service person or a user through the operation section 46 in accordance with the number of documents frequently set in the document tray 22 in the normal and general usage state (page 24, lines 10 to 15). Thus, in the setting screen (of the operation unit 46) the lowered amount of the document tray 22 can be set (received) (Page 25, lines 20 to 23). Moreover, for example, the setting keys K17 and K18 are used for setting (receiving) the lowered amount of the document tray 22, and the content set in this setting screen is stored in the above-described storage (page 26, lines 19 to page 27, line 5).

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On the contrary, Hattori describes, in the embodiment 3 (column 10, line 27 to column 11, line 56, in particular, column 11, pages 28 to 35), that in the case of the SADF mode the bottom plate 7 is lowered to an intermediate position (or SADF position) between the document feed position and the lowermost position (step S48). And the mode setting 38 allows the operator to select either one of an ADF mode (or standard mode) and an SADF mode (column 10, lines 35 to 40).

Hattori, however, does not teach or suggest that information according to a preselected position is stored in the storage such as RAM 28 when Hattori states "the bottom plate 7 is lowered to its preselected position (column 7, line 7)." (In column 4, lines 3 to 7, there is only a statement that a bottom plate sensor 34 determines whether or not the leading edge portion of the bottom plate 7 in the direction of the document feed, this statement having no operational or structural connection to the above-mentioned storage.) Further, Hattori does not recite the information according to a lowered amount of the sheet container or the storage for storing the received information as in the claimed features (1) and (2), set forth above.

Further, in Hirota, there is no configuration for lowering the paper feeding tray 2. Therefore, either the information according to a lowered amount of the sheet container or the storing the received information, of course, is not described by Hirota.

Independent claims 6, 11 and 16 contain the same recitations as claim 1.

It is not seen how the presently claimed invention would have been obvious to one of ordinary skill in the art in view of any combination of Hattori and Hirota.

In view of the discussion above, Applicants respectfully submit that the pending application is in condition for allowance. An early reconsideration and notice of allowance are earnestly solicited.

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If for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, the Commissioner is hereby authorized and requested to charge Deposit Account No. **04-1105**.

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Respectfully submitted,

By, 

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